PATENT SPECIFICATION
DRAWINGS ATTACHED
Inventor: THOMAS PORTER

1,102,697

1,102,697

Date of filing Complete Specification: Feb. 21, 1966.
Application Date: Feb. 19, 1965. No. 7196/65.
Complete Specification Published: Feb. 7, 1968.

Index at acceptance: —A4 T(24B1A, 24C1A, 24C2X, 24D3, 24D6, 24D7, 24D12, 24E5, 24E6)
Int. Cl.:—B 67 d 5/54

COMPLETE SPECIFICATION

Pressurised Delivery of Beverages

We, PORTER-LANCASTRIAN LIMITED, a British Company, of, Lancastrian Works, Bayley Street, Chorley Old Road, Bolton Lancashire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to beverage dispense systems.

In the Specification of Patent No. 890,170 we have described bags for use in the dispensing of liquids from containers.

In this Specification a manner of using inflatable bags is described, in which the bags are located within a keg or tank containing beer. One purpose of the bag is to prevent excessive solution in the beer of the pressure gas which gas provided the means to expel the beer from the tank or keg. Another purpose was to prevent contamination of the beer.

It is an object of this invention to extend the use of such expulsion apparatus, to a beverage dispense system.

According to the present invention, a beverage dispense system comprises a closed, rigid beverage-storage vessel which encloses a liquid compartment and separated therefrom a pressure gas compartment, a collapsible, flexible, bag within the vessel, the inside of which forms one of the compartments and the other compartment is formed between the inside of the vessel and the outside of the bag, the gas compartment being adapted for connection to a source of gas under pressure for forcing the beverage through conduit means connecting the liquid compartment to a metering device which, when operated, allows only a preselected quantity of beverage to be dispensed from the beverage compartment.

The metering device may be of the constant displacement type and arranged to dispense say half a pint or a full pint at one cycle. The control of the device is preferably located near the bar and usually at the dispense point on the bar, so that the device may be operable directly by the barman or operator.

The metering device is preferably placed in the cellar adjacent the beer container and operated in synchronism, with the dispense tap by electrical or pneumatic means, but the latter arrangement is preferred.

The dispense system may also include a cooling device located between the beer vessel and the dispense point.

Alternatively the beer vessel itself may be refrigerated.

The gas compartment is connected to a cylinder of gas through a second aperture so that the bag of beer is subject to a constant pressure tending to empty the bag.

One embodiment of the present invention will now be described by way of example, with reference to the single figure of the accompanying drawing.

Referring to the drawing, a closed, rigid beverage storage vessel 2 is situated in a beer cellar and has a connection piece in the upper end wall. One end of a conduit 4 is connected to the piece while the other end is connected to a source of pressure gas, in this embodiment the output side of a small air compressor (not shown).

A further connection piece 6 is screwed into the upper end wall of the vessel 2. A conduit 8 passes through the connection piece 6 in sealing contact therewith and dips part way into the keg, and the upper end is connected to a dispense point 12 at the bar above the cellar. There is in the cellar adjacent the vessel a metering device 10 which is of the constant displacement kind wherein a cham-

ber of preselected volume is emptied and recharged.

The other end of the connection piece is connected to a sterilised, collapsible, inflatable bag 14 similar to that described in the specification of our Patent No. 890,170. The bag 14 defines two compartments within the vessel 2, a gas compartment 16 between the outside of the bag and the inside of the vessel 2, and a beer compartment 18 inside the bag.

The bag 14 is of such a size that, when it is fully distended, it occupies substantially all the volume of the keg 2.

The metering device 10 is adjusted to deliever predetermined quantities of beer in response to the operation by the barman of a dispense tap 20. Once the tap 20 is opened a full measure is delivered.

Beer in the bag 14 is forced through the conduit 8 to the metering device by means of introducing the pressure gas into the chamber 16, and as the beer is dispensed the bag 14 gradually collapses.

The gas pressure which is maintained is sufficient to supply beer to the metering device at a time when beer has to be dispensed regularly and the device recharges briskly. The pressure required for the discharge of the beer is normally much higher than that required to keep the carbon dioxide in the beer in solution. The beer conduit up to the bar may be of small bore to reduce the amount of stagnant beer.

The bag may be made of a laminated material, one or more of the laminates adding strength to the bag whilst allowing the necessary stretching of the bag as it distends under internal pressure.

In another arrangement, the gas compartment is the space within the bag, and the liquid compartment is the space between the bag and the vessel.

The pressure is provided by an external gas source such as a cylinder of carbon dioxide or nitrogen or preferably compressed air from a compressor. The bag may be connected to the external source by a connection conduit extending from an aperture through which the bag is inserted in a collapsed and folded form as described in our Patent No. 890,170.

The said dispenser could be used with the dispense system described in the specifications of our co-pending Application Nos. 464/63 (Serial No. 1,067,866) and 45281/62 (Serial No. 1,067,865).

WHAT WE CLAIM IS:—

1. A beverage dispense system comprising a closed, rigid, beverage-storage vessel which encloses a beverage compartment and separated therefrom, a gas pressure compartment, a collapsible, flexible bag within the vessel, the inside of which bag forms one of the compartments and the other compartment is formed between the inside of the vessel and the outside of the bag, the gas compartment being adapted for connection to a source of gas under pressure for forcing the beverage through conduit means connecting the beverage compartment to a metering device which when operated, allows only a preselected quantity of beverage to be dispensed from the beverage compartment.

2. A beverage dispense system according to claim 1 in which the inside of the bag is the liquid compartment.

3. A beverage dispense system according to claim 1 or 2, in which the metering device is of the constant displacement type adapted to dispense half a pint or a pint of beverage.

4. A beverage dispense system according to any one of the preceding claims in which the bag is made of a laminated material, one or more of the laminates adding strength to the bag whilst allowing the necessary stretching of the bag.

5. A beverage dispense system according to any one of the preceding claims including a beverage cooler arranged to cool the beverage as it passes along the conduit means.

6. A beverage dispense system according to any one of claims 1 to 4, in which the vessel is refrigerated to cool the beverage.

7. A beverage dispense system substantially as hereinbefore described with reference to the accompanying drawing.

Agents for the Applicants,
SYDNEY E. M'CAW & CO.,
Chartered Patent Agents,
17, St. Ann's Square,
Manchester, 2.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1968.
Published by the Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

1102697 COMPLETE SPECIFICATION
1 SHEET This drawing is a reproduction of the Original on a reduced scale